

# FRED Module

Fast Recovery Epitaxial Diode

Common Cathode

Preliminary

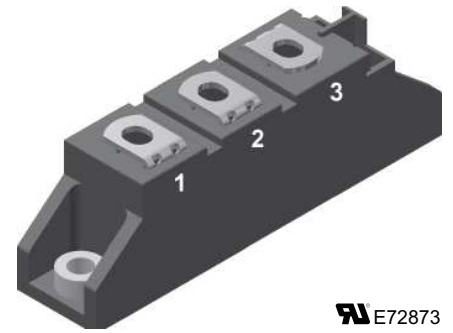
$$V_{RRM} = 600 \text{ V}$$


$$I_{FAV} = 95 \text{ A}$$

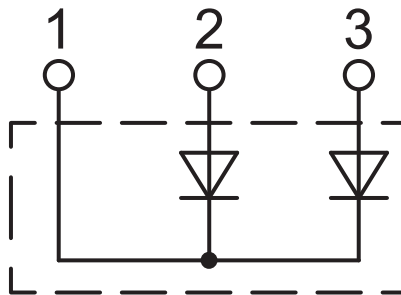
$$t_{rr} = 35 \text{ ns}$$

## Part number

MPK 95-06DA



 E72873



### Features / Advantages:

- Planar passivated chips
- Low switching losses
- Soft recovery behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

### Applications:

- Antiparallel diode for high frequency switching devices
- Free wheeling diode in converters and motor control circuits
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

### Package: TO-240AA

- Isolation voltage: 4800 V~
- Industry standard outline
- RoHS compliant
- Height: 30 mm
- Base plate: DCB ceramic
- Reduced weight
- Advanced power cycling

### Disclaimer Notice

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at [www.littelfuse.com/disclaimer-electronics](http://www.littelfuse.com/disclaimer-electronics).



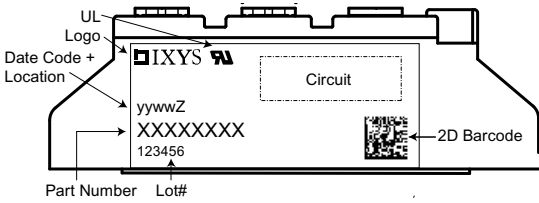
Diode				Ratings		
Symbol	Definitions	Conditions	min.	typ.	max.	
$V_{RSM}$	max. non-repetitive reverse blocking voltage				600	V
$V_{RRM}$	max. repetitive reverse blocking voltage				600	V
$I_{FRMS}$	RMS forward current				200	A
$I_{FAV}$ ①	average forward current	sine 180°			95	A
$I_{FSM}$	max. surge forward current	t = 10 ms (50 Hz), sine			1200	A
$P_{tot}$					215	W
$I_R$	reverse current	$V_R = V_{RRM}$			1.3 5	mA mA
$V_F$	forward voltage	$I_F = 50$ A $I_F = 100$ A			1.73 1.22 1.89 1.40	V V V V
$V_{T0}$	threshold voltage	for power-loss calculations only			0.98	V
$r_T$	slope resistance				2.3	mΩ
$R_{thJC}$	thermal resistance junction to case				0.575	K/W
$R_{thCH}$	thermal resistance junction to heatsink			0.1		K/W
$t_{rr}$	max. reverse recovery current	$I_F = 1$ A; $V_R = 30$ V; $-di/dt = 300$ A/μs		35		ns
$I_{RM}$	reverse recovery time	$I_F = 130$ A; $V_R = 100$ V $-di/dt = 300$ A/μs; L ≤ 0.05 μH		5.5	4.0 6.8	A A

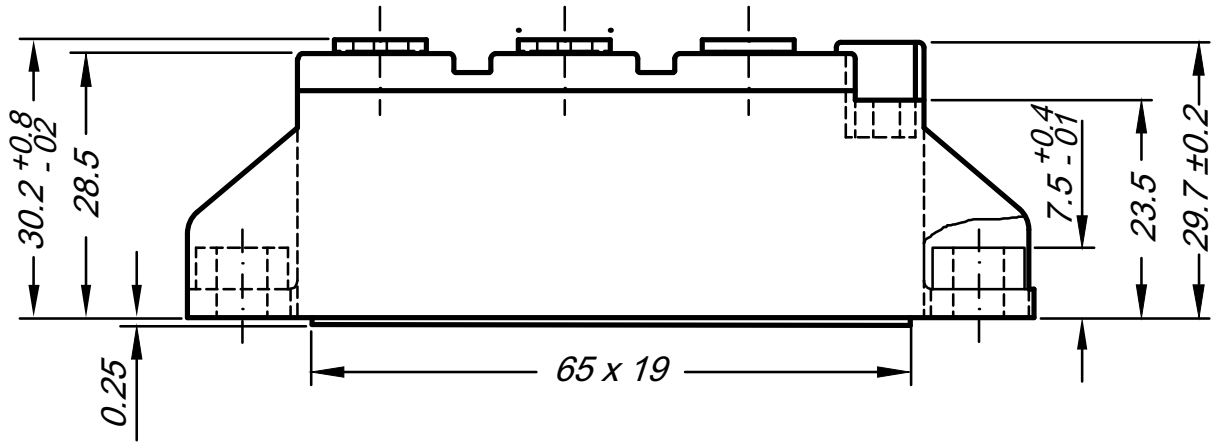
①  $I_{FAVM}$  rating includes reverse blocking losses at  $T_{VJM}$ ,  $V_R = 0.8 V_{RRM}$ , duty cycle d = 0.5



Preliminary

Package TO-240AA			Ratings			
Symbol	Definitions	Conditions	min.	typ.	max.	
$I_{RMS}$	RMS current	per terminal			200	A
$T_{VJ}$	virtual junction temperature		-40		150	°C
$T_{op}$	operation temperature		-40		125	°C
$T_{stg}$	storage temperature		-40		125	°C
<b>Weight</b>				76		g
$M_D$	mounting torque		2.5		4	Nm
$M_T$	terminal torque		2.5		4	Nm
$d_{Spp/App}$	creepage distance on surface   striking distance through air	terminal to terminal	13.0	9.7		mm
$d_{Spb/Apb}$		terminal to backside	16.0	16.0		mm
$V_{ISOL}$	isolation voltage	t = 1 second	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA		4800	V
		t = 1 minute			4000	V





General tolerance: DIN ISO 2768 class „c“

